Department of Toxic Substances Control

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Statement of Basis

for the proposed Post-Closure Permit
United Technologies Corporation, Pratt & Whitney Rocketdyne
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A. INTRODUCTION

The purpose of this Statement of Basis is to provide the rationale and decision-making process used by the Department of Toxic Substances Control (DTSC) for the issuance of a Post-Closure Permit (Permit). The Permit would be issued to the United Technologies Corporation, Pratt & Whitney Rocketdyne (UTC) located at 600 Metcalf Road, San Jose for three surface impoundments in accordance with the California Health and Safety Code, Chapter 6.5, Section 25100 et seq. and regulations set forth in California Code of Regulations, title 22, sections 66270.14 through 66260.23. The Post-Closure Permit application referred to in this Statement of Basis is dated September 22, 2006.

B. RCRA REGULATED UNITS COVERED BY THE POST-CLOSURE PERMIT

The RCRA regulated units addressed in the Permit are three former Surface Impoundments 0250, 0635 and 0706. These units were operated as Hazardous Waste Management Units under the authorization of an Interim Status Document issued by the Department of Health Services in 1981. All of the units have ceased operations as storage or treatment units for hazardous waste. In 1986 the three Surface Impoundments 0250, 0635, and 0706 were closed by demolition and removal of the concrete bases, excavation of sub-soils and backfilling with clean fill material. DTSC certified these three Surface Impoundments closed on November 25, 1991. Although UTC removed all liquids, sludges, and the impoundments themselves, these units are not currently eligible for clean closure status because it has not been verified that a release from these impoundments did not contribute to the regional groundwater contamination in the vicinities of these units. Therefore, groundwater monitoring is required in accordance with the requirements of the Permit. The originial closure in 1991 included removal of all impacted soils above the water table and installation of asphalt caps over the three surface impoundments. It was subsequently determined that these caps are serving no practical use and are not part of any requirements associated with this post-closure permit. The proposed Permit will be valid for a period of 10 years. The Permit will be revised and renewed after ten years assuming post-closure activities are still required.

C. INTERAGENCY COORDINATION

DTSC is the lead agency for post-closure activities associated with the former three surface impoundments SI-250, SI-635, and SI-750. The San Francisco Bay Regional Water Quality Control Board (RWQCB), pursuant to SB 1082 (Calderon 1993), has been designated as the lead agency for RCRA Corrective Action at the entire facility. The two agencies have worked cooperatively with each other at this site. An effort was made to ensure that RCRA post-closure requirements were met while providing equal assurance that the requirements did not impede site-wide groundwater and soil remediation efforts underway under the RWQCB lead.

D. SITE-WIDE CONTAMINATION

Volatile organic compounds (VOCs) and perchlorate have contaminated groundwater throughout the site, creating a regional groundwater plume that consists of several delineated subplumes. The primary conclusions regarding the surface impoundments are as follows:

1) Soil beneath the three surface impoundments was impacted by the contents of the impoundments.
2) It is likely that the three surface impoundments released hazardous waste to groundwater and contributed to the regional plume, but the quantity and time of such releases cannot be determined.
3) The impoundments and underlying soil were removed fifteen to twenty years ago.
4) The concrete liners of the surface impoundments have been removed. Contaminated soils above health based screening levels above the water table have been removed.

The three surface impoundments were not eligible for clean closure status because of the contaminated groundwater plume surrounding them. Therefore, the three surface impoundments are subject to a post-closure permit. A Post-Closure Permit Application was submitted to DTSC by UTC with this understanding, i.e., that the surface impoundments are no longer releasing contaminants to groundwater. The agencies agreed that the best management strategy for the surface impoundment releases is to employ an overarching groundwater remediation strategy to the entire regional groundwater plume, rather than have DTSC manage the surface impoundment plume separately while RWQCB manages the rest of the site. The RWQCB Site Cleanup Requirements (SCRs) are an integral part of the Permit. Ongoing RWQCB remediation activities, including groundwater and surface water monitoring and groundwater extraction and treatment are specified in detail in the SCRs and included by reference in the Permit.

E. GROUNDWATER MONITORING REQUIREMENTS

RCRA groundwater monitoring requirements for the three surface impoundments are outlined in Table 2 of the Permit.

UTC will be conducting its Groundwater Monitoring Program in accordance with California Code of Regulations (CCR) title 22, section 66264.100. General water quality monitoring and system requirements, as set forth in CCR, title 22, section 66264.97, are also required in the Permit. These monitoring requirements, and the rationale for them, are described in detail below.

1. Background Groundwater Monitoring Locations

CCR, title 22, section 66264.97(b)(1)(A) requires that a sufficient number of background monitoring points be installed at appropriate locations and depths to yield groundwater samples from the uppermost aquifer. Background wells were not designated for the three surface impoundments because groundwater upgradient of each of the impoundments is impacted by contaminants from sources unrelated to the surface impoundments. An unimpacted well would have to be located hundreds of feet upgradient of the surface impoundments in the mouth of the canyon. There is some question as to whether the Upper Perched Zone (UPZ) and Lower Unconfined Zone (LUZ) even extend that far.

2. RCRA Monitoring Wells and Point of Compliance Wells

CCR, title 22, section 66264.97(b)(1)(D)(2) requires that a sufficient number of monitoring points be installed at appropriate locations and depths to provide data needed to evaluate compliance with the water quality protection standard and to evaluate the effectiveness of the Corrective Action program. The current number of monitoring wells installed at UTC exceeds this requirement. Therefore, a subset of monitoring wells was designated for each regulated unit and labeled as RCRA monitoring wells. The complete list of RCRA monitoring wells is located in Table 2 of the Permit and in Table 9-5 of the Post-Closure Permit Application. Three wells for each surface impoundment were designated as RCRA monitoring wells, for a total of 9 wells.

Point of Compliance wells are required for each RCRA unit by CCR, title 22, section 66264.95. The significance of the Point of Compliance wells is that groundwater remediation shall continue at the unit until such time as testing of the Point of Compliance well indicates attainment of cleanup goals (i.e., media cleanup standard) or until a demonstration can be made to show that contaminants in groundwater are not a result of a release from the former surface impoundments. Contamination released to the saturated zone from the surface impoundments has likely moved beyond the surface footprint of the impoundments into the regional plume as a result of groundwater migration. The regional plume extends upgradient and downgradient, sometimes hundreds of feet, from each former surface impoundment. Therefore, one

well was designated as a RCRA point of compliance well for each impoundment. One well was selected immediately downgradient of each impoundment unit to represent the Point of Compliance.

3. Water Quality Protection Standards

The Water Quality Protection Standard consists of a list of the constituents of concern (COCs), monitoring parameters, concentration limits (cleanup goals), and points of compliance. The COCs are the waste constituents, reaction products, and hazardous constituents that are reasonably expected to be in or derived from waste contained in the regulated unit.

The COCs and Point of Compliance wells are listed in Table 2 of the Permit and Table 9-5 of the Post-Closure Permit Application. Note that the Point of Compliance wells are a subset of the RCRA Post-Closure Groundwater Monitoring Plan wells and are indicated by an asterisk. Groundwater and surface water cleanup goals are listed in Table 1 of the Permit and in Table 2 of the RWQCB SCRs (5/19/2004) for the site. Groundwater samples will be analyzed for the complete set of COCs every year. The COCs for SI 250 are VOCs, metals, cyanide, and perchlorate. The COCs for SI 635 include VOCs, perchlorate, and organochlorine pesticide. The COCs for SI 706 include VOCs and perchlorate.

Monitoring parameters are subsets of the COCs and are analyzed more frequently than COCs. Groundwater samples from all RCRA wells at the surface impoundments are analyzed for these contaminants every six months.

4. Appendix IX Sampling

Groundwater samples from all RCRA Post-Closure Groundwater Monitoring Plan wells as listed in Table 2 of the Post-Closure Permit will be analyzed for constituents found in CCR, title 22, chapter 14, Appendix IX, at least once every five years.

5. Sampling Frequency

All RCRA wells will be monitored semiannually for monitoring parameters (i.e., VOCs and perchlorate) and for other COCs on an annual basis (see Table 2 of the Permit). This sampling schedule was based on the following rationale:

1) The facility has a documented release of VOCs and perchlorate.
2) The release of VOCs and perchlorate has been mostly delineated.
3) Corrective action for the remediation of VOCs and perchlorate has been implemented by the RWQCB and semiannual monitoring provides an appropriate timeframe to evaluate the effectiveness of the corrective action program.

F. GROUNDWATER TREATMENT

Since the presence of groundwater associated with all three units contains levels of contaminants above approved groundwater cleanup goals, groundwater treatment is ongoing and will continue until the cleanup goals have been achieved or until a demonstration can be made to show that contaminants in groundwater are not a result of a release from the former surface impoundments. Treatment consists of groundwater extraction and treatment. Treatment consists of a combination of air stripping, filtering through granular activated carbon, and use of ion exchange resins. Cleanup goals for groundwater are listed in Table 1 of the Permit. Groundwater cleanup is being overseen by the RWQCB as detailed in the Site Cleanup Requirements issued by RWQCB to the facility. The SCRs are referenced in the Permit.

G. SURFACE WATER MONITORING REQUIREMENTS

CCR, title 22, section 66264.97(c) requires that a surface water monitoring system be in place for each surface water body that could be affected by a release from RCRA regulated units. Water Quality Protection Standards for surface water are established by the SCRs and are repeated in Table 1 of the Permit. Thus the SCRs satisfy RCRA surface water monitoring requirements and, therefore, DTSC did not impose additional conditions for surface water monitoring.